EXERCISE SCIENCE/SPORTS MEDICINE

CIP Code: 51.0809
Levels: 10-12
Units of Credit: One Credit
Skill Certificate: Available

Description: This full-year course is designed to teach students components of exercise science/sports medicine including exploration of therapeutic careers, medical terminology, anatomy, physiology, first aid, injury prevention, the healing process, rehabilitation techniques, therapeutic modalities, sport nutrition, sport psychology and performance enhancement philosophies.

Standards, Objectives & Indicators
(September 2002)

Objectives and Indicators that are bolded and italicized represent required performance skills. Use the Performance Skills Evaluation Score Sheet to assess.

STANDARD **5% - 3 Questions**
01 **Students will explore therapeutic careers.**

OBJECTIVES

01.01 ***Explore a variety of therapeutic careers*** (including athletic training, physical therapy, occupational therapy, exercise physiology, sport psychology, dietician, orthopedic surgeon, massage therapist, chiropractor, strength and conditioning coach, personal trainer).
- List skills necessary.
- Identify the education required.
- Discuss career settings and job descriptions.

01.02 Examine legal issues and terminology.
- Discuss parameters of ethical conduct.
- Review preventative measures to reduce potential risks of litigation.
- Explain legal issues and terminology.

01.03 Outline standards of documentation.
- ***Prepare a basic SOAP note.***

STANDARD **10% - 7 Questions**

02 **Students will apply medical terminology.**

OBJECTIVES

02.01 Identify and utilize anatomical positions, planes, directional terms, movements, and postures.

02.02 Use medical terminology, abbreviations, and root words to describe injuries and conditions.

STANDARD **10% - 7 Questions**

03 **Students will review anatomy and physiology as it applies to the prevention and care of injuries.**

OBJECTIVES

03.01 Identify major anatomical structures of the skeletal, muscular, respiratory, circulatory, digestive, and nervous systems.

03.02 Explain functions, disorders, and injuries to the skeletal, muscular, respiratory, circulatory, digestive and nervous systems.

STANDARD **15% - 10 Questions**

04 **Students will be able to administer first aid.**

OBJECTIVES

04.01 Describe signs, symptoms, and management of potentially life-threatening and non-life-threatening injuries.

04.02 Describe the components of an emergency action plan.

04.03 ***Perform appropriate first aid skills.***

- ***Show proof of current CPR certification through the American Heart Association, American Red Cross, or National Safety Council.***
- ***Perform a primary and secondary survey.***
- ***Perform a general HIPS survey.***
- ***Accurately measure blood pressure, pulse rate and respiration rate.***
- ***Perform procedures that control bleeding.***
- ***Fit crutches to any size individual.***

STANDARD **5% - 4 Questions**

05 **Students will apply injury prevention principles.**

OBJECTIVES

05.01 Describe basic principles of injury prevention.

- Recognize types of protective equipment.
- Discuss the legal ramifications of manufacturing, buying, and issuing equipment.

05.02 ***Demonstrate the theory and principles of prophylactic taping and bracing.***

- ***Competently tape an ankle within five minutes using the standard prophylactic taping method.***
- ***Competently tape a thumb within three minutes using the standard prophylactic taping method.***
- ***Competently tape an elbow hyperextension within five minutes using the standard prophylactic taping method.***

STANDARD **10% - 7 Questions**

06 **Students will describe the injury and healing process.**

OBJECTIVES

06.01 Describe the stages by which tissue healing occurs in soft tissue and bone.

06.02 Classify and explain the three degrees of tissue injury.

06.03 Analyze the causes of pain and its side effects.

STANDARD **15% - 11 Questions**

07 **Students will explain and administer therapeutic modalities and rehabilitation techniques.**

OBJECTIVES

07.01 Identify the physiologic effects, indications, and contraindications for cold, heat massage, and stretching.

- ***Demonstrate the R.I.C.E. method for acute injures.***
- ***Demonstrate proper techniques of static stretching for all major muscle groups.***

07.02 Classify the guidelines, components, and phases of a rehabilitation program.

07.03 Differentiate between the "Said", "Overload", and "Specificity" principles as they apply to conditioning and muscle training.

07.04 Identify a given exercise as an open or closed kinetic chain exercise.

07.05 Compare and contrast isometric, isotonic, and isokinetic exercises.

STANDARD **10% - 7 Questions**

08 **Students will explore various aspects of sport nutrition.**

OBJECTIVES

08.01 Describe basic body composition.
08.02 Explain the purpose and methods of fluid replacement.
08.03 Explain the purpose and recommendations for a pre and post-game meal.
08.04 Identify the signs, symptoms, and side effects of anorexia and bulimia.
08.05 Compare and contrast several types of ergogenic aids, their physiological and psychological effects.

STANDARD **5% - 4 Questions**

09 **Students will describe principles of sport psychology.**

OBJECTIVES

09.01 Identify the immediate psychological responses of athletes to injury.
09.02 Classify the cycle of loss the athlete will experience.
09.03 Discuss uses of psychological intervention.
09.04 Evaluate symptoms and interventions for over-training, staleness, and burnout.

STANDARD **15% - 10 Questions**

10 **Students will differentiate and examine performance enhancement philosophies.**

OBJECTIVES

10.01 Describe how to assess strength, flexibility, and cardiovascular endurance with simple equipment.
10.02 Identify the methods of periodization.
10.03 Identify strength training considerations and illustrate proper lifting and spotting techniques.

***Performance Evaluation Checklist:** **Performance evaluation checklists and score sheet are located at http://www.usoe.k12.ut.us/ate/Skills/hst/701.htm**